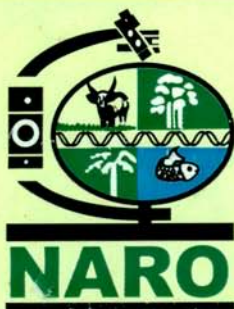


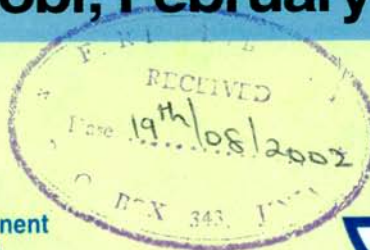
Commercialization of the Fisheries of Lake Victoria and its Implications for Local Livelihoods



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1. INTRODUCTION

Development of the Lake Victoria basin is increasingly becoming the focal point in the re-establishment of the East African Co-operation (EAC). The Committee on Lake Victoria Development Programme has been established within EAC to co-ordinate this development. Central to this programme is the fisheries, considered a valuable source of food, income and foreign exchange earnings for the region.

An estimated 124,369 fishers are involved in fishing on Lake Victoria, operating with 41,091 boats from 1,498 landing sites, according to the findings of the Frame Survey 2000 data. About 653,619 gillnets and other types of fishing gear and some 4,066 outboard engines are involved. Some four million people are believed to derive their living from the fisheries either directly or indirectly. The number has been able to rise to this level as a result of the development within the fisheries, accruing from the expanding process of commercialization.

The purpose of this paper is to examine the impact of commercialization on the livelihood of local people. The paper attempts to provide an understating of the key elements of the local livelihoods and how they are affected by the process of commercialization within fisheries.

Commercialization of the fisheries is defined as production for the market as the main objective, as opposed to production for direct household consumption. It involves transactions, aimed at generating earnings. The trade in Lake Victoria fish is carried out on domestic, regional and international levels. The main species traded are the Nile perch, 'mukene', also known as dagaa, and Nile tilapia. The transformation from subsistence to commercial production has created new activities, bringing in new players on the scene. The fishery industry has evolved into a new structure with new products and higher levels of production. It has also created new demands in terms of skills, facilities and services. All this development has implications for the livelihoods of the local communities.

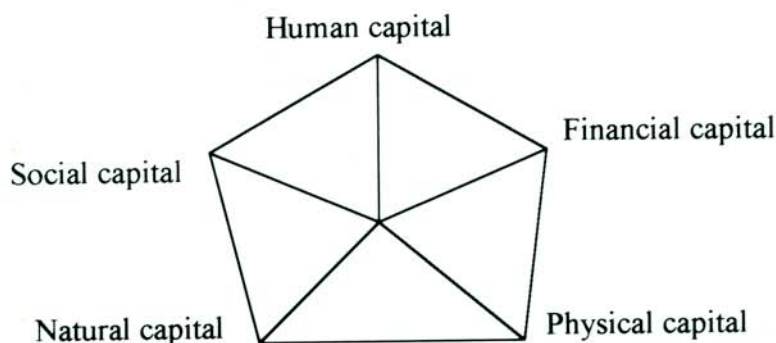
Desired livelihood outcomes of a community include food security, improved incomes and higher quality of life, reflected in high levels of educational and health achievements. Apart from improving the livelihood of a community, there is need to ensure its sustainability. A livelihood is said to be sustainable "when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the national resource base" (Carney 1998 p. 4). Reduced vulnerability and more sustainable use of the natural resource base are, therefore, other important livelihood outcomes.

2. LIVELIHOOD ANALYSIS FRAMEWORK

A definition of livelihood includes capabilities, assets and activities that contribute to local living. Commercialization can enhance livelihoods in the fisheries by influencing

the different elements of the pentagon of livelihood assets of the communities, as illustrated in Figure 1.

Figure 1: The Pentagon of Livelihood Assets



Source: from (Carney 1998)

The various livelihood assets and how they are affected by fisheries commercialization are outlined below:

- a) Human capital refers to the skills, knowledge, ability to work and to pursue different livelihood strategies as well as health. These qualities have been stimulated and considerable achievements made in human development in fisheries. However, constraints have often been encountered due to inadequate support received from the institutions responsible for provision of education, research, extension and health services to the fishery communities.
- b) Financial capital includes financial resources available through earnings, savings and credit that could be channeled into livelihood activities. Fish trade has increased earnings among the fishery communities. However, the situation has been limited by the poor domestic market for fish, poor saving culture among fishers and inadequate credit services to the fishing communities.
- c) Physical capital refers to infrastructure, namely transport, water, electricity and communication, as well as production and processing equipment needed in pursuing livelihoods. Commercialization has created demand for infrastructure, although the response by the relevant state ministries has been inadequate and the infrastructure to the fisheries is still poor. Considerable fishing and fish processing equipment have, however, been accumulated in the recent past.
- d) Natural capital concerns natural resource stocks from which resource flows that are useful for livelihoods are derived. Fisheries development has exerted strain on the fisheries resources. This has been exacerbated by the inability of the Fisheries Departments to successfully carry out fisheries management on Lake Victoria. However, it should be pointed out that as a result of the growing

commercial activities, the lake has attracted considerable attention, expertise and resources into the management of its fisheries resources.

- e) Social capital includes the support from social groups upon which people draw in pursuit of livelihoods. Several organizations have developed within the fisheries, rendering different types of relevant support to fishers, processors and traders, men and women. However, social capital is often eroded by weak community institutions, negative cultural practices, job insecurity among boat labourers, nationality and ethnic discrimination, segregation based on sex and wealth status, domestic violence and sexual abuse.

Commercialization is, therefore, important for fisheries because it stimulates development of all the elements within the pentagon of livelihood assets.

3. IMPACT ON FOOD SECURITY

One of the main elements of livelihood is food security. The importance of fish in the diet of local communities has been recognized, as a healthy and nutritious food. Fish is said to be a source of easily digestible, high-quality protein. It is rich in amino acids and also contains calcium, phosphorus, iron and vitamin A and D. It is, therefore, able to enhance the diet of poor people, which may be dominated by cereals or tubers. It thus helps to prevent diseases associated with nutritional imbalances (Le Sann 1998). Fish is also generally cheaper than its main substitute, meat.

Commercialization of fisheries has mixed impacts on food security as illustrated by the following observations:

- a) Domestic fish trade has enabled non-fishing communities within the country to gain access to fish and improve their diet, allowing a wider section of the population to gain from the nation's fisheries resources.
- b) Fishers have been motivated to minimize fish wastage, allowing better utilization of the resource.
- c) They have had opportunity to utilize their earnings from fish to buy other types of food, enabling them to attain a balanced diet.
- d) However, with increasing fish trade, fishing households have tended to suffer reduction in their consumption to below desirable levels, due to desire to maximize earnings from fish sale. In most cases, the best fish was sold for cash.
- e) Sale of mukene to feed millers for the production of poultry/animal/fish feeds deprived local consumers of an affordable source of fish.
- f) Export of fish has adversely affected local consumers by diverting supply away from them and increasing fish prices to levels unattainable by many locals.

4. IMPACT ON INCOMES

Another important element of livelihood is improved income, which enables one to meet ones' needs. These include the basic needs of food, clothing and shelter as well as the

social needs. Commercialization of the fisheries can improve incomes of the local communities through increases in fish sales and/or prices as well as creation of job opportunities.

The impact of fisheries development on livelihoods can be analysed through conceptualization of the fish commodity system with the aid of a descriptive model, depicting four main flow channels for fish (Figure 2). The model can be used to identify the different activities carried out, thus showing the livelihood activities and opportunities created by the process of fisheries commercialization.

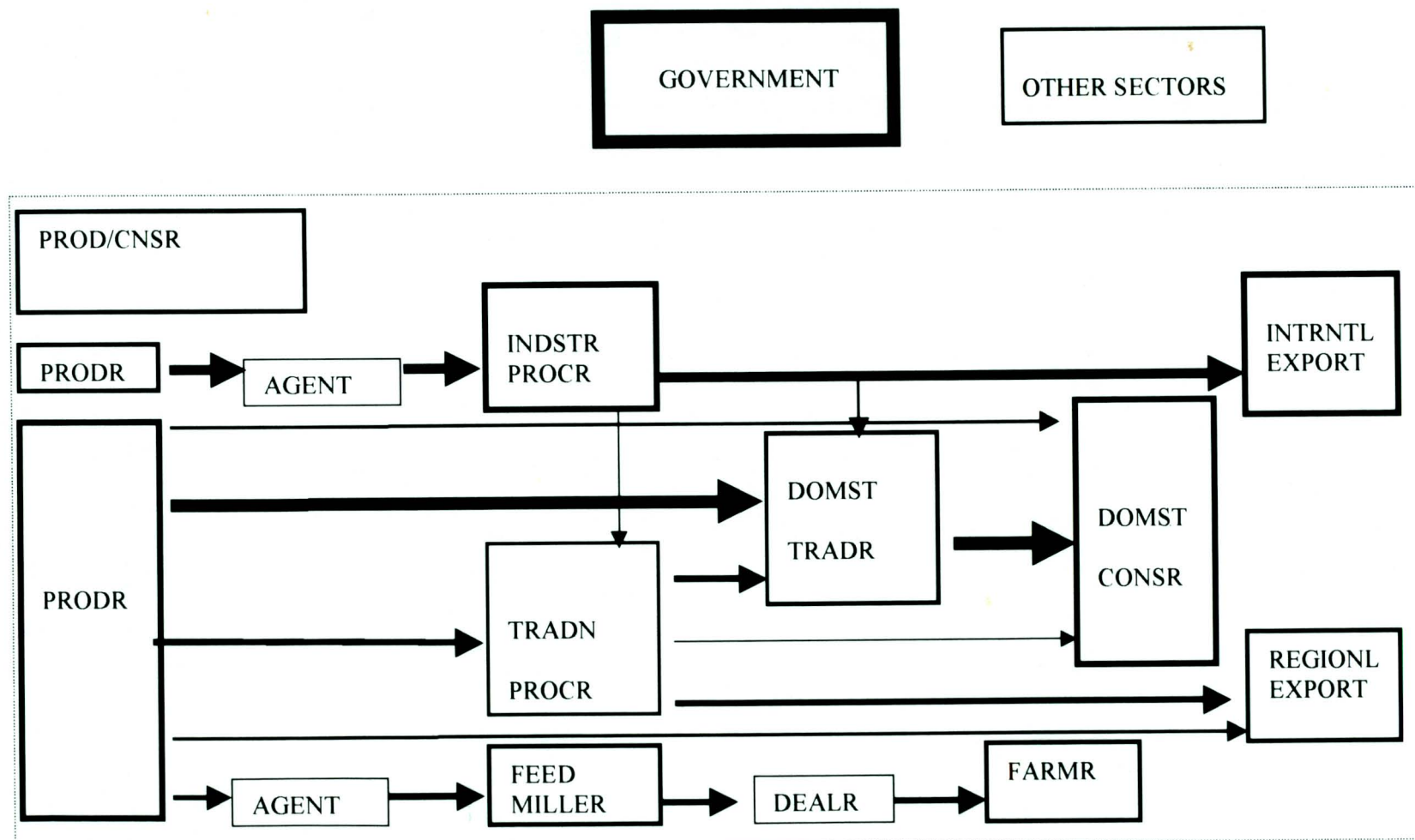
The first channel is that which serves the subsistence fishers, characterised by traditional gear and techniques and producing for household consumption. The activities are often on part-time basis. Women participation is noticeable here. The pentagon of livelihood assets is quite small and progress within the channel is not evident.

The second channel is that which serves the overseas export market. It involves larger scale operations than the others, bigger capital investments, better organisation, higher quality products, better facilities and greater earnings. Within the channel, artisanal fishers supply fish to the industrial processing plants directly or through factory agents. Chilled fillets of *L. niloticus* as well as frozen fish are exported mainly to destinations in Europe, Asia and USA. The by-products, namely fish frames and off-cuts are sold on the domestic market, often after some processing. Despite the high earnings associated with the trade, it is highly risky because of the frequent fish ban on the EU market, due to food safety concerns and other factors over which the countries in the region have little control.

The largest channel is the domestic market for fish, in terms of employment and volumes of fish. It also supplies fish to the regional markets. However, it is limited by widespread unsustainable fishing practices, poor infrastructure and services and low purchasing power among consumers.

Finally, there is the channel that delivers *R. argentea* from producers to plants processing animal feeds, an industry that has been growing of recent. There has been concern that the industry was depriving human consumers with a source of nutritious affordable fish supply, threatening the population with malnutrition (FAO 1999).

Figure 2: Fish Commodity Systems Flow Diagram, from Producers to Consumers



Observations on the impact of fisheries development on income as an element of livelihoods can, therefore, be outlined as follows:

- a) Fish trade has generated earnings to fishers, which have increased with expansion of the trade and export.
- b) Employment opportunities have been created and have expanded at the fishing, fish processing and marketing stages.
- c) As a result of the commercial fishery activities, additional employment opportunities have been created within the support services, namely boat and gear supply and maintenance; provision of fuel; supply of food and other essential commodities, drug shops; restaurants and bars; hair salons, video halls etc.
- d) The broad employment avenues created have opened up opportunities for greater involvement of women in the fisheries and related activities.
- e) Industrial fish processing created job opportunities for technical and semi-skilled workers in the processing plants.
- f) Processing and marketing of the by-products from industrial processing, particularly fish frames and off-cuts created additional employment to local communities.
- g) Development of industrial fish processing for export deprived a large section of the artisanal processors, domestic and regional traders of supplies of fish (Abila and Jansen 1994).
- h) Competition for raw fish from the industrial processors resulted in high prices for the fish, reducing the profit margins of the local middlemen.

5. SUSTAINABILITY AND VULNERABILITY

A number of risks and uncertainties are associated with fisheries operations and the operators have increasingly been exposed to them as a result of the growing commercialization of the operations. An understanding of the risks and uncertainties are important because they cause a household or individual to experience an episode of income or health over time (Odongkara 2001).

In fisheries the risk takes many forms and is experienced mainly at three levels, namely at the production, marketing and personal level. At the production level, the livelihoods of the fishing communities are threatened first by degradation of the fisheries resource base, resulting in decline in fish catch over the years and catching of immature fish. Commercialization has contributed to this through excessive effort, bad fishing practices and influx of population to the beaches causing pollution due to poor sanitation.

The risk may also arise from different phenomena on the fish market, leading to a collapse in demand and fish prices with livelihood consequences. The recent cases of market collapse first occurred at the height of the "Rwanda genocide" in 1995, when bodies of victims floated down River Kagera into Lake Victoria and consumers refused to eat fish. Secondly, in 1999 consumers again refused to eat fish due to the widespread

use of poison fishing on the lake. For the exporters, the frequent ban on Lake Victoria fish to the EU market is a risk. Other marketing risks include the frequent failure of collecting boats to reach the islands for their catches. Non-payment to fishers by fish processors and traders for fish deliveries made is a common problem. Spoilage due to bad weather is also experienced, especially with the mukene operators. Other risks and threats include theft of gear and of catch, boat and vehicle accidents and risk of infection by the common diseases at the beaches.

World Bank (2001 p.20) describes some of the options for links to informal networks and formal safety nets that would minimise the impact of the risk events on a household. They included the household's physical assets that could be sold to make up for temporary loss of income; human capital in the form of education that could be useful in managing credit and in securing additional income sources for the household and diversification into low risk income activities to lessen the vulnerability of the household. It could also participate in links to groups that provide credit or support in case of a catastrophe.

6. SUPPORTING COMMERCIALIZATION

Commercialization stands a high chance of improving livelihoods if it is supported by an enabling environment. This environment can be created through measures to address the constraints to the livelihood assets explained in para. 2. the main recommendations are as follows:

- a) The fisheries sector should be regulated to ensure that the needs of local consumers and middlemen are catered for.
- b) The institutions for fisheries management, provision of education and health services and infrastructure development should be strengthened.
- c) A saving culture should be promoted among the fishing communities and supplemented with the services of micro-finance enterprises.
- d) Technological development among fishery operators should be promoted through strengthening education, research and extension.

Successful fisheries commercialization would, therefore, involve action at the individual, community and state levels.

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